



JRC SCIENCE FOR POLICY REPORT

Scientific, Technical and Economic Committee for Fisheries (STECF)

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Preparation for the evaluation of the list of mandatory research surveys at sea (STECF-18-04)

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Abstract

Commission Decision of 25 February 2016 setting up a Scientific, Technical and Economic Committee for Fisheries, C(2016) 1084, OJ C 74, 26.2.2016, p. 4–10. The Commission may consult the group on any matter relating to marine and fisheries biology, fishing gear technology, fisheries economics, fisheries governance, ecosystem effects of fisheries, aquaculture or similar disciplines. This report deals with the preparation of the evaluation of the list of mandatory research surveys at sea.

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TABLE OF CONTENTS

SCIENTIFIC, TECHNICAL AND ECONOMIC COMMITTEE FOR FISHERIES (STECF) - Preparation for the evaluation of the list of mandatory research surveys at sea	6
(STECF-18-04).....	6
Request to the STECF	6
STECF response.....	7
STECF observations	8
STECF comments.....	9
STECF responses to the additional ToRs	11
STECF conclusions.....	11
Contact details of STECF members	11
Expert Working Group EWG-18-04 report	15
1 Introduction.....	16
1.1 Terms of Reference for EWG-18-04.	16
2 Description of the scoping meeting (EWG-18-04).	18
2.1 Comparison of the previously used scoring approach and the proposed Decision Support Tool for evaluating surveys proposed for the mandatory list.	21
3 Tasks addressed by EWG-18-04.....	21
3.1 Task #1. Develop Terms of Reference and roadmap for the surveys review.	21
3.2 Task #2. Evaluate information provided and needed for the surveys review.	22
3.3 Task #3. Identify surveys used for advice and gaps in coverage. ...	22
3.4 Task #4. Identify surveys used for advice and gaps in coverage. ...	22
3.5 Task #5. Rules and a procedure for evaluating and prioritizing surveys.	22
4 Tasks not addressed by EWG-18-04.....	22
4.1 Task #6. Frequency of survey reviews.....	22
4.2 Task #7. Propose a format for describing and categorizing the mandatory surveys.....	23
4.3 Task #8. Discuss methodologies for evaluating the cost of surveys.....	23
5 Proposed Terms of Reference (TOR) for the surveys review.	23
5.1 TOR 1. Evaluate the list of surveys.....	23
5.2 TOR 2. Identify fishery management needs.	23

5.3	TOR 3. Identify survey information relating to an ecosystem-based approach to fishery management.....	24
6	Proposed decision support tool for the surveys review and associated databases.	24
6.1	Background to surveys under the DCF.....	24
6.2	The Decision Support Tool (DST).	25
6.2.1	Aim of the Decision Support Tool.	25
6.2.2	Method used in the Decision Support Tool.	25
6.2.3	Criteria addressed by the Decision Support Tool.	26
6.2.4	DST instructions and examples.	26
6.2.5	Preliminary testing and results of the Decision Support Tool.	26
6.3	Databases supporting the Decision Support Tool.	26
6.3.1	The <i>Stocks</i> database.....	26
6.3.2	The <i>Surveys</i> database.....	27
7	Roadmap for the surveys review.	27
8	List of acronyms and their definitions.....	30
9	Figures.....	31
9.1	Figure 1. Schematic diagram of the Decision Support Tool (DST)..	31
10	Tables.	32
10.1	Table 1. Overview of the data fields in the <i>Stocks</i> and <i>Surveys</i> databases and the decision support tool (DST).	32
10.2	Table 2. Relationship between the Decision Support Tool and criteria used and proposed for the future from previous SGRNs (07-01, 10-03) and criteria presented by DG MARE in a background discussion document.	38
11	List of participants.	40
12	Contact details of EWG-18-04 participants.....	41
13	List of Background Documents	43
14	List of Annexes	43
14.1	Electronic annexes.....	43
15	Annexes.....	44
15.1	Annex 1. Table 10 of EU Multiannual Programme (<i>Research surveys at sea</i>).....	44
15.2	Annex 2. Example of the overview table produced by the Decision Support Tool (DST).....	46

SCIENTIFIC, TECHNICAL AND ECONOMIC COMMITTEE FOR FISHERIES (STECF) - Preparation for the evaluation of the list of mandatory research surveys at sea (STECF-18-04)

Request to the STECF

STECF is requested to review the report of the STECF Expert Working Group meeting, evaluate the findings and make any appropriate comments and recommendations.

Additional request:

Background provided by the Commission

In line with STECF Plenary Meeting 18-01 (point 5.7 of Report), the STECF EWG 18-04 - that took place between 14-18 May 2018 - was a scoping meeting, in order to prepare for the review of surveys.

As part of its TORs, the EWG 18-04 proposed a timeline for next steps (see annexed), that will lead to an EWG on the revision of the mandatory research surveys under the Data Collection Framework (DCF). The EWG 18-04 used as a basis the proposal of STECF PLEN 18-01 (Annex), having in mind a one-year gap between this meeting and the actual review of surveys.

The EWG 18-04 also developed a new evaluation system for the surveys, which is schematically represented by a flow chart, called the Decision Support Tool (DST). This tool includes all six criteria from the DCF Regulation (Recast), regarding the surveys. Each step/question in the flow chart can be answered by 'yes' or 'no' (binary system). Depending on the answer, the survey will be either proposed for inclusion in the mandatory list of surveys or excluded. Some surveys that are excluded will be sent to expert groups for further evaluation and possible re-application of the DST at a later iteration. The entry point of the DST is the stock, rather than the survey. In order to ensure the availability of all necessary data for the review of surveys using the DST, the EWG 18-04 decided to outline a Stocks database and a Surveys database. The two databases are set up as general as possible, in order to accommodate the width of survey set-ups across the relevant EU areas. Also, the two databases will be used by the future survey review EWG to identify data gaps (e.g. stocks with no surveys). The background information to populate the two databases was already provided by MS, as coordinated by Regional Coordination Groups (RCGs), and end users (ICES) prior to the EWG 18-04. However, work still needs to be done in that respect, as the format in which the information was originally requested for the EWG 18-04 is not the same, as the format of Stocks and Surveys databases.

Request to the STECF:

1. Test the DST: STECF PLEN 18-02 is requested to investigate the suitability of the proposed DST and associated databases (Survey and Stock databases). To do this, STECF PLEN 18-02 should populate the Stocks and Surveys databases with the information already provided by MS, as coordinated by RCGs, and end users (ICES) to EWG 18-04. The testing should be done by choosing only a number of suitable case studies from different marine regions, not the whole list of surveys and stocks. The aim of this exercise is to: (i) assess the capacity of the databases to give sufficient information to go through the DST evaluation process and (ii) to check how the DST works. Any discrepancies and cases where the DST does not work should be highlighted.

2. To make certain the guidelines for applying the DST are clear and complete. STECF PLEN 18-02 is requested to ensure consistency of the guidelines between the: (1) DST; (2) Stocks database and (3) Surveys database. As the two databases are meant to provide the information for running of the DST, STECF PLEN 18-02 is requested to cross check that fields across the two databases and the DST have the same title and definition/ description and that there are neither gaps nor unnecessary duplications.

3. To provide advice on improvements of the Stocks and Surveys databases and the DST.

4. To describe in detail the information needed to be provided by end users in order to assess the question in the DST originally drafted as follows: 'Is the survey essential to the advice?'

Timeline as agreed in STECF PLEN 18-01 (page 84 of report)

Timeline for next steps towards survey review

STECF concludes that a similar timeline as in 2010 should be used:

Action	Responsible	Before
Finalise checking surveys against use in the advice, prepared by ICES	ICES	EWG 18-04
Gather background information on surveys in the Mediterranean, Black Sea and ICCAT region from the RCG Med&BS and RCG on Large Pelagics	RCG Med&BS and RCG LP chairs	EWG 18-04
Agree on criteria, ToRs, roadmap and preparation needed for the survey review	EWG 18-04	end of May 2018
Endorse EWG 18-04 report	STECF PLEN 18-02	mid-July 2018
Send request for consistent information on surveys (template to fill in) to MS	EC	mid-July 2018
Fill out the template on survey information and send to RCGs	MS	end of Aug 2018
Compile the survey information from MS by region	RCGs	end of Sep 2018
Compile survey information for all regions	Liaison Meeting	Oct 2018
Send compiled survey information to MS and end-users for final checks	EC	end of Oct 2018
Provide final updated background information on surveys to survey review meeting	EC	end of 2018
Review group meeting (EWG 19-XX)	STECF	early 2019
Report survey review to STECF Plenary	EWG 19-XX chair	April 2019

STECF response

Background

Member States (MS) regularly conduct research surveys of marine fish resources to provide fundamental data for assessing the condition of exploited fish stocks and for monitoring general conditions of the marine ecosystem. A number of these surveys are included in the Data Collection Framework (DCF). They have been consequently supported financially by direct management (2002-2013) and the European Maritime Fisheries Fund (EMFF) (2014-2020). The list of mandatory research surveys at sea (Appendix IX of the Multiannual Community Programme) was first reviewed in 2007 (Sub-Group of Research Needs (SGRN) 07-01). This meeting was followed by two other EWGs (SGRN 09-04 which developed the TORs and roadmap for SGRN 10-03). However, the resulting 2010 Scientific, Technical and Economic Committee for Fisheries (STECF) recommendations did not lead to modifications in the data collection legal framework of 2011, because the specific elements were incorporated in the National Programmes of Member States (MS). The ensuing legal revisions of the DCF (roll over 2014-2016 and current EU MAP) have kept the original list of surveys intact, as reviewed in 2007.

STECF recommended that surveys should be subject to frequent evaluation (at least once every 5 years). An EWG was originally called to revise the existing research surveys listed in Table 10 of the EU MAP in 2017, but this was subsequently moved to May 2018, in order to allow for proper

preparation. Since then, Regional Coordination Groups (RCGs) and MS have been compiling information on current and future surveys, naming conventions and coordinating with main end-users (e.g. International Council for the Exploration of the Sea -ICES). This preparatory work is not yet finalised and/or consistent across all sea basins. In addition, STECF has recommended that criteria, scoring rules and criteria weightings for prioritizing and evaluating the surveys should be adopted and approved by the STECF before the surveys review meeting (as was the case in 2010). The STECF work carried out in 2009/2010 needs to be updated, if one takes into account (i) the new regulatory DCF framework ((EU) 2017/1004, Recast¹ that has been adopted recently (2016-2017), in which specific requirements should be met, (ii) new management needs and (iii) the experience gained by MS, the priorities that have changed and the science that has advanced.

In view of the above, there is a clear need to conduct a scoping meeting, in order to prepare for the review of surveys in a future meeting. This will also allow for MS and end user consultation between the proposed scoping meeting in May and the actual review of surveys, at a date to be determined.

During its PLEN 18-01, the STECF discussed the proposed by the Commission draft ToRs for EWG 18-04. Considering the relatively short time left until the EWG 18-04, STECF acknowledged the proposed change in direction of the EWG from the originally foreseen review of surveys to a scoping meeting, setting the framework and procedures for the actual survey review by the Commission plan of action.

STECF observations

The Expert working group 18-04 was held in Varese, Italy, from 14th to 18th May 2018 to discuss and plan for a future EWG that will review research surveys of marine fish resources and propose surveys to be included on the list of mandatory surveys, as a revision to Table 10 of the EU Multiannual Program (EU MAP). The meeting was attended by 17 experts in total, including 2 STECF members and 4 JRC experts.

Tasks for the EWG were the following:

1. The EWG is invited to develop the draft TORs and roadmap for the EWG meeting that will evaluate the research surveys at sea.
2. Based on the information compiled by MS and RCGs, the EWG is invited to:
 - a. evaluate the information provided on the current and proposed list of surveys and describe any additional information required to conduct the review of surveys;
 - b. define the format to report such additional information and provide specific guidelines and a timeline to ensure provision of the necessary information needed for the EWG on the revision of surveys;
 - c. discuss whether access to existing data held in supranational databases is necessary for the compilation of additional information or necessary for the EWG on the revision of surveys.
3. Based on the above and any end user feedback, the EWG is invited to collate existing information on the data collected under surveys versus the data needed for the scientific advisory process and for fulfilling Common Fisheries Policy (CFP) priorities. The EWG is invited to include an assessment of which surveys are used for scientific advice, as well as the extent of coverage of stocks by surveys. Gaps should be also highlighted as part of these analyses.
4. The EWG is invited to define the characteristics of a survey and what makes it mandatory.
5. The EWG is invited to discuss and agree on the criteria, scoring rules, criteria weightings, methodologies and data quality aspects to be used for the prioritization and evaluation of surveys.

¹ Regulation (EU) 2017/1004 of the European Parliament and of the Council of 17 May 2017 on the establishment of a Union framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the common fisheries policy and repealing Council Regulation (EC) No 199/2008 (Recast)

6. The EWG is invited to discuss the frequency of revision of the survey review, if the latter departs from STECF recommendation of an, at least, 5-year cycle.
7. The EWG is invited to propose a format of description and categorization of the mandatory research surveys at sea in the future DCF legal framework, using Table 10 of EU MAP as a starting point.
8. As a secondary task, the EWG is invited to discuss methodologies on how to evaluate the cost of surveys.

The STECF notes that the following tasks were not addressed by the EWG due to time limitations:

Task No. 6. Frequency of survey reviews.

Task No. 7. Propose a format for describing and categorizing the mandatory surveys.

Task No. 8. Discuss methodologies for evaluating the cost of surveys.

The STECF, however acknowledges that the primary task of the group, “to develop the draft TORs and roadmap for the EWG meeting that will evaluate the research surveys at sea”; including a proposed Decision Support Tool for survey (DST) review and associated databases was fully addressed.

STECF comments

The STECF observes that the EWG 18-04 has proposed a set of tasks for the future EWG’s on review of the list of the research surveys at sea, and the roadmap of tasks that need to be completed before the surveys’ review are conducted. They also proposed a Decision Support Tool (DST) together with the appropriate databases, to evaluate the importance of the surveys. However, STECF notes that prior to the meeting of the survey review EWG, detailed instructions on the use of the tool will have to be provided in a yet-to-be-written guidance document, together with guidance how to approach the questions that must be answered when applying the tool. STECF notes that given the heavy workload of RCGs, it would be preferable to use ad hoc contracts rather than asking RCGs to develop a guidance document with details how to populate the databases and how to use the data within DST.

The STECF notes that the proposed tasks for the future survey review EWG are rather extensive. Besides the evaluation of the surveys listed in Table 10 of the EU MAP and the identification of management needs (TORs 1 and 2), the tasks include also the identification of the survey information on ecosystem data supporting Marine Strategy Framework Directive descriptors 1, 3, 4, 6 and 10. This extensive scope of the EWG would need a wide expertise among the participants.

The STECF notes that the EWG18-04 considered a fundamentally different approach for inclusion of surveys in the mandatory list compared to the previous evaluations in 2007 and 2010, where each individual survey was scored against a set of criteria laid out in the DCF or based on those criteria. The proposed new approach is driven from the viewpoint of the end-user needs, rather than from the viewpoint of the surveys.

This new approach, which the group described as a Decision Support Tool (DST), considers each individual fish stock (including also stocks that are not analytically assessed) and various characteristics of any associated surveys (e.g. international coordination, data accessibility etc.), to generate a binary (Yes/No) decision regarding whether the associated surveys should be placed on the list of mandatory surveys. The STECF notes that some EWG members expressed concerns that the proposed DST approach would be less transparent than the previous survey-scoring approach because the DST would not result in a ranked list. However, STECF considers that the additional information from the proposed stock- and survey- databases (see below) as well as the new DST approach starting from end-users needs, will improve the evaluation of the surveys. It is also expected that it will efficiently identify gaps and duplication in survey coverage. The DST has also the advantage that it is specifically designed to identify those surveys that are mandatory, whereas the criteria used for the previous surveys’ review were developed to identify those surveys at sea that would be eligible for funding under the DCF.

The STECF also notes that the DST includes various feedback loops allowing for end-user input (through associated expert groups) and the possibility of adjusting and improving the design of

those surveys that otherwise would not immediately qualify as a candidate for the mandatory list of surveys.

STECF further observes that two databases would be needed for the implementation of the DST. The proposed **Stocks database** would be the primary source of information on which the DST would be applied for evaluating whether surveys should be included in the future list of mandatory surveys. The Stocks database would also be used to identify possible duplicate surveys and stocks that are not covered by surveys. The proposed **Surveys database** would provide detailed information about the characteristics of EU surveys at sea used to collect data needed for stock assessment or the provision of management advice, either with respect to fisheries or to the ecosystem. The proposed database would contain information for all surveys at sea currently listed in Table 10 of the EU MAP and for any additional existing or future surveys proposed by Member States and the RCGs. The STECF notes that making the Stock and Survey databases up-to-date before the meeting of the survey review EWG is of critical importance with respect to evaluating the present list of mandatory surveys as well as the potential new ones.

The STECF notes that each stock and its associated surveys would be screened through a number of criteria, including all six from the DCF Regulation EU/2017/1004 (Recast), regarding the surveys, prior to making any decisions on the future of the survey.

- Is fishery management advice is provided for the stock?
- Are indices from the survey used in the assessment or TAC calculation for the stock?
- Is the survey is internationally coordinated and harmonized?
- Are the data from the survey are accessible and available for scientific use?
- Does the survey provide the basis for the assessment or management advice for the stock?
- Does the survey provide adequate coverage for the stock?
- Does any duplication exist between this particular survey and other surveys for this stock?

STECF suggests that all surveys, listed in EU MAP Table 10 and those proposed by the Member States and RCGs, should be evaluated approximatively every 5 years.

STECF endorses the following TOR's proposed by the EWG-18-04 for future EWG's on survey review

TOR 1. Evaluate the list of surveys.

The surveys review EWG is requested

- a) to evaluate a list of candidate surveys at sea to be supported by the DCF based on the **Stocks** database, **Surveys** database, and Decision Support Tool (DST), which are described briefly below and more fully in the report;
- b) to provide quality assurance of the information contained in the **Stocks** database and **Surveys** database;
- c) to produce a set of tables that summarize the DST results;
- d) to produce a list of surveys proposed for inclusion on the list of mandatory surveys (a revision to Table 10 of the EU MAP) based on the application of the DST; and
- e) to identify potential duplicate surveys that need evaluation.

TOR 2. Identify fishery management needs.

The surveys review EWG is requested to provide analyses of the **Stocks** database ...

- a) that identify stocks not covered by surveys and
- b) that identifies duplicate surveys and compares this list of duplicates with the list of duplicates identified under TOR 1e.

TOR 3. Identify survey information relating to an ecosystem-based approach to fishery management.

The surveys review EWG is requested to provide an analysis of the **Surveys** database that identifies contributions by the surveys of ecosystem data supporting Marine Strategy Framework Directive (MSFD) descriptors 1, 3, 4, 6, and 10.

STECF responses to the additional ToRs

1. STECF did not attempt to conduct an in-depth investigation on the suitability of the proposed DST, as the stocks and survey databases are not available yet and the EWG 18-04 has tested the DST extensively. However, STECF examined the examples provided in the EWG-18-04 for the Baltic and the North Sea and found that the proposed DST approach is an improvement from the previously used survey scoring approach as it starts from end-user needs and is likely to identify gaps and duplication in survey coverage. The STECF notes that the stocks and survey databases, required for a comprehensive testing of the DST, will be completed within the coming months by *inter alia* the Regional Coordination Groups (RCGs), as outlined by the roadmap proposed by the EWG.
2. The STECF concludes that the DST draft guidance provided in the report of the EWG18-04 is clear and includes all essential criteria to evaluate the surveys. Cross-checking the structure of the two databases and DST did not reveal any major inconsistencies.
3. STECF considers the EWG proposals for the structure of the stocks and survey databases and the DST as sufficient to allow for an efficient full review of surveys
4. The EWG on survey review should take into account existing information from stock assessments regarding the importance of the surveys in developing stock advice.

STECF conclusions

STECF endorses the implementation of the Decision Support Tool (DST) approach, based on updated Stock and Survey databases for review EWGs in order to derive a candidate list of mandatory surveys at sea. STECF also concludes that all surveys, both those currently listed in EU MAP Table 10 and those additionally proposed by the Member States and RCGs should be evaluated on routine basis every 5 years approximatively.

STECF endorses the draft Terms of Reference and proposed Roadmap for the future survey review EWG, proposed by the EWG 18-04. STECF also notes that, given the heavy workload of RCGs, it would be preferable to use ad hoc contracts rather than asking RCGs to develop a guidance document with details how to populate the databases and how to use the data within DST.

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REPORT TO THE STECF

EXPERT WORKING GROUP ON Preparation for the evaluation of the list of mandatory research surveys at sea (EWG-18-04)

Varese, Italy, 14-18 May 2018

This report does not necessarily reflect the view of the STECF and the European Commission and in no way anticipates the Commission's future policy in this area

EXPERT WORKING GROUP EWG-18-04 REPORT

1 INTRODUCTION.

The Expert Working Group EWG-18-04 met in Varese, Italy at the Palace Grand Hotel during 14-18 May 2018 to discuss and plan for a future EWG that will review research surveys of marine fish resources. The EWG consisted of two members of the STECF, one staff member from DG MARE, three experts from the Joint Research Center (JRC), and eight invited experts. The list of EWG-18-04 participants is in section 10 (*List of participants*) and their contact details are provided in section 12 (*Contact details of EWG-18-04 participants*).

1.1 Terms of Reference for EWG-18-04.

The aim of this Expert Working Group (EWG) is to develop draft Terms of Reference (TORs) and a roadmap for the review of the mandatory research surveys at sea, as listed in Table 10 of EU Multiannual Programme (EU MAP)², which is also attached as Annex 1 to this document.

Background provided by the Commission.

Member States (MS) regularly conduct research surveys of marine fish resources to provide fundamental data for assessing the condition of exploited fish stocks and for monitoring general conditions of the marine ecosystem. A number of these surveys are included in the Data Collection Framework (DCF). They have been consequently supported financially by direct management (2002-2013) and the European Maritime Fisheries Fund (EMFF) (2014-2020). The list of mandatory research surveys at sea (Appendix IX of the Multiannual Community Programme³) was first reviewed in 2007 (Sub-Group of Research Needs (SGRN) 07-01⁴). This meeting was followed by two other EWGs (SGRN 09-04⁵ which developed the TORs and roadmap for SGRN 10-03⁶). However, the resulting 2010 Scientific, Technical and Economic Committee for Fisheries (STECF) recommendations did not lead to modifications in the data collection legal framework of 2011⁷, because the specific elements were incorporated in the National Programmes of Member States (MS). The ensuing legal revisions of the DCF (roll over 2014-2016⁸ and current EU MAP) have kept the original list of surveys intact, as reviewed in 2007.

STECF recommended that surveys should be subject to frequent evaluation (at least once every 5 years). An EWG was originally called to revise the existing research surveys listed in Table 10 of the EU MAP in 2017, but this was subsequently moved to May 2018, in order to allow for proper preparation. Since then, Regional Coordination Groups (RCGs) and MS have been compiling information on current and future surveys, naming conventions and coordinating with main end users (International Council for the Exploration of the Sea -ICES). This preparatory work is not yet finalised and/or consistent across all sea basins. In addition, STECF has recommended that

² COM Implementing Decision (EU) 2016/1251 of 12 July 2016 adopting a multiannual Union programme for the collection, management and use of data in the fisheries and aquaculture sectors for the period 2017-2019.

³ COM Decision of 6 November 2008 adopting a multiannual Community programme pursuant to Council Regulation (EC) No 199/2008 establishing a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the common fisheries policy

⁴ Scientific, Technical and Economic Committee for Fisheries (STECF). Report of the Working Group on Research Needs: Review of list of surveys at sea (Appendix XIV OF EU Commission Regulation N°1581/2004) with their priorities (SGRN 07-01), Brussels, 12-16 February 2007.

⁵ Scientific, Technical and Economic Committee for Fisheries (STECF) Framework and a Roadmap for the Review of Surveys. Report of the Subgroup on Research Needs (SGECA/SGRN 09-04) Joint Subgroup on Economic Affairs (SGECA) and on Research Needs (SGRN) of the Scientific, Technical and Economic Committee for Fisheries (STECF), 07-11 December 2009, Hamburg.

⁶ Scientific, Technical and Economic Committee for Fisheries (STECF). Sub-Group on Research Needs: SGRN 10-03. Review of needs related to surveys. 4 - 8 October 2010, Brussels, Belgium.

⁷ COM Decision of 18 December 2009 adopting a multiannual Community programme for the collection, management and use of data in the fisheries sector for the period 2011-2013.

⁸ COM Implementing Decision of 13.8.2013 extending the multiannual Union programme for the collection, management and use of data in the fisheries sector for the period 2011-2013 to the period 2014-2016.

criteria, scoring rules and criteria weightings for prioritizing and evaluating the surveys should be adopted and approved by the STECF before the surveys review meeting (as was the case in 2010). The STECF work carried out in 2009/2010 needs to be updated, if one takes into account (i) the new regulatory DCF framework (Recast⁹, EU MAP) that has been adopted recently (2016-2017), in which specific requirements should be met, (ii) new management needs and (iii) the experience gained by MS, the priorities that have changed and the science that has advanced.

In view of the above, there is a clear need to conduct a scoping meeting, in order to prepare for the review of surveys in a future meeting. This will also allow for MS and end user consultation between the proposed scoping meeting in May and the actual review of surveys, at a date to be determined.

Tasks for the EWG.

1. The EWG is invited to develop the draft TORs and roadmap for the EWG meeting that will evaluate the research surveys at sea.
2. Based on the information compiled by MS and RCGs (see 'Background' above), the EWG is invited to:
 - (i) evaluate the information provided on the current and proposed list of surveys and describe any additional information required to conduct the review of surveys;
 - (ii) define the format to report such additional information and provide specific guidelines and a timeline to ensure provision of the necessary information needed for the EWG on the revision of surveys;
 - (iii) discuss whether access to existing data held in supranational databases is necessary for the compilation of additional information or necessary for the EWG on the revision of surveys.
3. Based on the above and any end user feedback, the EWG is invited to collate existing information on the data collected under surveys versus the data needed for the scientific advisory process and for fulfilling Common Fisheries Policy (CFP¹⁰) priorities. The EWG is invited to include an assessment of which surveys are used for scientific advice, as well as the extent of coverage of stocks by surveys. Gaps should be also highlighted as part of these analyses.
4. The EWG is invited to define the characteristics of a survey and what makes it mandatory.
5. The EWG is invited to discuss and agree on the criteria, scoring rules, criteria weightings, methodologies and data quality aspects to be used for the prioritization and evaluation of surveys.
6. The EWG is invited to discuss the frequency of revision of the survey review, if the latter departs from STECF recommendation of an, at least, 5-year cycle.
7. The EWG is invited to propose a format of description and categorization of the mandatory research surveys at sea in the future DCF legal framework, using Table 10 of EU MAP as a starting point.
8. As a secondary task, the EWG is invited to discuss methodologies on how to evaluate the cost of surveys.

The EWG should take into account relevant information from previous STECF meetings (e.g. SGRN 07-01, 09-04, 10-03, STECF Plenary 18-01), relevant end users and steering committees

⁹ Regulation (EU) 2017/1004 of the European Parliament and of the Council of 17 May 2017 on the establishment of a Union framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the common fisheries policy and repealing Council Regulation (EC) No 199/2008 (recast).

¹⁰ Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013 on the Common Fisheries Policy, amending Council Regulations (EC) No 1954/2003 and (EC) No 1224/2009 and repealing Council Regulations (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585/EC.

of surveys (eg. ICES, Pan-Mediterranean Acoustic Survey (MEDIAS), International Bottom trawl survey in the Mediterranean [MEDITS]), RCG reports (with particular reference to the 2016 'Report of the pan-regional RCG subgroup on cost sharing of research surveys at sea'¹¹), MS DCF programs, CFP priorities, DCF Regulatory Framework (Recast, EU MAP, Work Plan template) with particular reference to data requirements, data transmission failures linked to current surveys and any relevant scientific publications and meetings.

2 DESCRIPTION OF THE SCOPING MEETING (EWG-18-04).

The meeting began the afternoon of 14 May with a series of presentations. Ms Venetia Kostopoulou described the historical context for reviews of EU fishery resources surveys, also provided as a discussion document, and the Terms of Reference developed for this EWG. Dr David Sampson, chair of the STECF Sub-Group of Research Needs (SGRN) 10-03, described the format of and results from the most recent (2010) review of research surveys proposed by Member States (MS) for funding under the Data Collection Framework (DCF). Ms Lotte Worsøe Clausen described how surveys are used in the International Council for the Exploration of the Sea (ICES) to inform stock assessments and provide fisheries and ecosystem advice. Dr Bill Karp gave an overview of fisheries assessment surveys in the United States and processes that have been developed for their review and prioritization. There was general interest in the multi-criteria decision making approach that the US NOAA Fisheries has used for evaluating surveys and discussion about how such an approach might be used for evaluating fishery resource surveys in Europe.

The draft agenda for EWG-18-04 had laid out a progression of tasks directed at the TORs that the EWG would accomplish primarily by working in sub-groups, starting with an evaluation of the information on surveys compiled by the Member States (MS) and the Regional Coordination Groups (RCGs). However, at the start of the second day, during discussion of the daily agenda, it became clear that many members of the EWG wanted to consider a new and fundamentally different approach to reviewing the surveys. The new approach would be driven from the viewpoint of the end-user needs, which is in principle the "fish stocks" at the current stage, rather than from the viewpoint of the surveys. This viewpoint that data should be collected according to end-user needs stems from one of the main aims of the new DCF regulation and was a request addressed to the EWG-18-04 from COM. According to the COM discussion document, there is a need to compare what is needed (end-user needs) with what is collected (current surveys). This comparison will allow the mapping of existing gaps and possible duplications. Past reviews of fishery resources surveys (SGRN 07-01, SGRN 10-03) took the approach of evaluating each survey based on its score with respect to a small number of agreed criteria. SGRN 07-01 used three criteria (scored as Yes/No) and SGRN 10-03 used six criteria (scored as 1/2/3), two of which were subdivided into two parts. Although this type of survey-scoring approach had the advantage of clearly identifying the relative importance of the surveys, the decision regarding the threshold for which surveys should be considered "mandatory" was fundamentally based on the relative weights assigned to the criteria and these weights were very subjective. Moreover, the way the final score is calculated (as a weighted mean of the criteria scores) might not result in disqualification of a survey that was clearly inconsistent with end-user needs (e.g., data accessibility).

The new approach for reviewing the surveys was proposed to the EWG by several members who initially described the approach as applying a "decision tree" to each individual fish stock to generate a Yes/No decision regarding whether a survey should be placed on the list of mandatory surveys (Table 10 in the EU MAP). There was agreement that the EWG would refer to the decision tree approach as the *Decision Support Tool* (DST) and the EWG proposes use of the DST for the evaluation of the surveys. The DST approach has the advantage of being fundamentally focused on whether a survey satisfies end-user needs, in keeping with the requirement that data

¹¹ https://datacollection.jrc.ec.europa.eu/docs/rcm/2017/-/document_library_display/dEy6/view/1060339/42001?_110_INSTANCE_dEy6_redirect=https%3A%2F%2Fdatacollection.jrc.ec.europa.eu%2Fdocs%2Frcm%2F2017%3Fp_p_id%3D110_INSTANCE_dEy6%26p_p_lifecycle%3D0%26p_p_stat%3Dnormal%26p_p_mode%3Dview%26p_p_col_id%3Dcolumn-2%26p_p_col_count%3D1

collection under the DCF should be consistent with end-user needs. It should be noted that if the DST is implemented as described below, there will be no technical information available in the short term that evaluates of how well each survey meets specific stock assessment information needs. However, later applications of the DST could easily incorporate such information as it becomes available.

There was a discussion about who are the end-users of the fishery resource surveys. The EWG adopted the idea that the survey end-users are the assessment and advisory bodies that make use of the data collected on fishery resource surveys. Regarding the provision of advice on fisheries management under the CFP, the end-users' needs for surveys are to provide fishery-independent estimates (or indices) of stock biomass and abundance and to provide biological information such as maturity, fecundity, and age composition as inputs to stock assessments. In addition, surveys are fundamental to providing the basis for spatial management, as survey data are useful to identify essential fish habitat for relevant stocks (e.g., nursery and spawning grounds), particularly in the Mediterranean. The survey data are used in a variety of ways depending on the stock assessment methods employed, which in turn are related to the availability of different types of fishery-dependent data. In essence, fishery-independent data from surveys usually are highly desirable, irrespective of the availability of fishery-dependent data.

Defining end-user needs is not straightforward and one must be aware of the distinction between the desire for having fishery-independent data and a requirement for having such data. Survey data may be desirable because they add value to an assessment, whereas a requirement for survey data implies that the data are essential to an assessment, meaning no other reliable data sources are available. Such a situation might occur if there is severe degradation in the quality of the fishery dependent data. Even if some useful fishery dependent data are available, there are cases where survey data are necessary.

The EWG has worked on the principle that if surveys are currently used to inform assessments, they are at least desirable, but determining whether they are essential and/or should be a mandatory requirement under the DCF requires in-depth technical analyses (during benchmark assessments for example) and such analyses are likely beyond the scope of the forthcoming review of surveys. Even if such detailed technical analyses are undertaken, it is not clear whether there are objective means to discriminate if a particular survey is to be considered desirable or essential or mandatory under the DCF. It is highly likely that such decisions will remain subjective judgements. If a survey provides fishery-independent information on multiple species/stocks for example, each of which is assessed separately, the information may be crucial for some of the assessments and less useful for others while nonetheless providing useful information (e.g., population indices, the location of spawning grounds). Objectively gauging the importance of a survey is fraught with challenges and the EWG consider such a task to be well beyond its scope and expertise. Although it seems likely that the forthcoming review of surveys proposed by the EWG will not include in-depth technical analyses of the importance of the surveys, the proposed review approach will identify surveys that could be amended to better respond to end-user needs.

The EWG did not immediately accept the idea of the Decision Support Tool and there was considerable discussion of whether the tool would provide a good path forward. Some members of the EWG expressed concern that the DST approach would be less transparent than the previously used survey-scoring approach because the DST would not result in a ranked list. Instead the DST would partition the set of proposed surveys into two groups, one group consisting of surveys included in the list of mandatory surveys and another group excluded from that list. Some EWG members felt that from this result it would not be clear why surveys were or were not listed as mandatory. Following some discussion it became clear that the DST would include Y/N branches associated with each stock and survey and would thereby indicate which aspects caused a survey to be judged deficient. Further, the DST would evaluate a survey against every stock for which the survey provides information for an assessment. It was suggested that if the Commission requires a ranked list of surveys, the ranking could be derived (for example) by counting how many stocks each survey provides information for. Also, use of the DST as discussed by the EWG should be viewed as part of an iterative process rather than as a simple one-time application. Surveys that "fail" on some criteria (e.g., adequate stock area coverage, duplication of other surveys) would be sent to an appropriate expert group for further consideration and potential reconsideration for the list of mandatory surveys.

The pros and cons of the survey-scoring approach (used previously) versus the new DST approach are laid out below in section 2.1 (*Comparison of the previously used scoring approach and the proposed Decision Support Tool for evaluating surveys proposed for the mandatory list*). The group agreed to proceed with the new DST approach.

One important discussion by the EWG focused on how to evaluate objectively the “importance” of a survey to any given stock assessment. While the stock assessment experts who conducted the assessments are the most qualified individuals to gauge the importance of the information provided by any given survey, there is no clear approach for quantifying the importance of information to an assessment, nor is there an easy mechanism for collecting such information in the short term. Although a questionnaire could be sent to all the stock assessors who last conducted the assessments, collecting the information would probably require six months or more. The EWG discussed the idea of requesting that future benchmark stock assessments include a set of sensitivity analyses that would evaluate the importance of each survey’s information by conducting a set of “leave-one-out” analyses. Even this approach has pitfalls because it may not be possible to judge a best approach when confronted with two surveys that provide conflicting information on trends in a stock. Furthermore, such an approach cannot be applied in the Mediterranean and Black sea, not only because the process of benchmark assessments has not yet been implemented, but also (and especially) because the number of mandatory surveys in the European portions of these regions is still very limited. The process of reviewing surveys should consider the possibility of expanding the list of mandatory surveys, for example to cover specific stocks, or areas not yet covered by an existing survey or time of the year currently not covered by any survey. In the short term the EWG is of the opinion that the surveys review could proceed using the default assumption that a survey is important if it provides information that is used in a stock assessment or in the provision of advice.

With regard to the task of identifying data needs, gaps in the information provided by fishery resource surveys, and duplications that are potentially unnecessary, the EWG proposes that a database be developed that includes a complete list of stocks and for each stock the database includes at least one entry (row) plus additional entries for each survey that provided information used for that stock for an assessment or for the provision of management advice (e.g., an annual catch quota based on the survey biomass index for the previous year or a trend in population indicators). A cross-tabulation of this **Stocks** database could be used to identify stocks for which there are few or no surveys. This **Stocks** database would also be the primary source of information input to the DST.

The CFP prescribes that it shall contribute to the collection of scientific data and that in particular it shall be coherent with the Union environmental legislation, in particular with the objective of achieving a Good Environmental Status (GES) under the Marine Strategy Framework Directive (MSFD) by 2020 as set out in Article 1(1) of Directive 2008/56/EC, as well as with other Union policies. Given that the DCF aims to make provision for the collection of scientific data to support the CFP, the EWG takes the view that the DCF shall also be used to inform the assessment of GES by providing the data that contribute to the indicators specified in the MSFD under descriptors 1, 3, 4, 6, and 10, and especially descriptor 3. Such information is derived from the results of stock assessments and from data collected on scientific surveys.

With regard to identifying gaps in the ecosystem information provided by fishery resource surveys, the EWG proposes that a second database be developed that includes a complete list of surveys and the types of ecosystem information provided by each survey. A cross-tabulation of this **Surveys** database could be used to identify surveys providing ecosystem information and identifying gaps in terms of coverage of areas and periods of the year. The **Surveys** database would also be a secondary source of information input to the DST.

Further details regarding the Decision Support Tool (DST) and the associated **Stocks** and **Surveys** databases are provided below in section 6 (*Proposed decision support tool for the surveys review and associated databases*).

2.1 Comparison of the previously used scoring approach and the proposed Decision Support Tool for evaluating surveys proposed for the mandatory list.

Pros	Cons
Scoring approach (used previously):	
<ul style="list-style-type: none"> Familiar to DG MARE, STECF, and the Members States. Produces ranked list of surveys. Produces summary table of scores that show the relative strengths and weakness of the surveys. 	<ul style="list-style-type: none"> Requires subjectively determined weights to combine criteria scores. Requires arbitrary cut-off for which surveys to include on the mandatory list. Includes no end-user perspective.
Proposed Decision Support Tool approach:	
<ul style="list-style-type: none"> Operates from the perspective of stocks (end-user needs) rather than starting from the surveys. Produces definitive lists of: (a) surveys proposed for the mandatory list; (b) surveys that would benefit from modification (c) surveys that might be unnecessary duplicates. Does not require weights to combine criteria scores. Does not require an arbitrary cut-off for which surveys to include on the mandatory list. Provides a means to identify gaps and possibly unnecessary duplications. 	<ul style="list-style-type: none"> New to DG MARE, STECF, and the Members States. Does not produce a ranked list of surveys. The approach has received limited testing and may need refinement.

3 TASKS ADDRESSED BY EWG-18-04.

Although the EWG meeting did not closely follow its prescribed agenda, all but three of the eight tasks laid out in the Terms of Reference for the EWG were considered.

3.1 Task #1. Develop Terms of Reference and roadmap for the surveys review.

The EWG developed a set of three proposed TORs for the surveys review and a roadmap of tasks that need to be completed in advance of the review. These are described fully below in section 6 (*Proposed decision support tool for the surveys review and associated databases*) and section 7 (*Roadmap for the surveys review*).

In brief, the EWG proposes the use of a Decision Support Tool (DST) that evaluates from the perspective of the individual fish stocks whether a survey proposed for inclusion in the list of mandatory surveys (Table 10 of the EU MAP) satisfies various criteria established as part of the Data Collection Framework (DCF). The primary output from the DST is a list of surveys proposed for inclusion in a revision to the list of mandatory surveys and a list of surveys excluded from the list of mandatory surveys, including the criteria for which surveys were deemed deficient and action(s) that could be taken to improve the deficient surveys. The information that is input to the DST takes the form of two databases, a **Stocks** database with stock-by-stock information indicating all the surveys that provide supporting information and a matching **Surveys** database with survey-specific information. The surveys review EWG will use the **Stocks** database to identify gaps with regard to stocks not supported by surveys and will use the **Surveys** database

to identify surveys providing data supporting MSFD information needs as well as gaps in coverage (areas and periods of the year).

3.2 Task #2. Evaluate information provided and needed for the surveys review.

Although the EWG did not conduct detailed analyses of the background files compiled by the Member States, Regional Coordination Groups, and ICES, these information sources were used by the EWG to conduct some limited testing of the Decision Support Tool (DST) and they will be the primary data sources for populating the **Stocks** and **Surveys** databases, but will require reformatting. Because the DST evaluates information on a stock-by-stock basis (rather than starting from an individual survey) the **Stocks** database will need to be populated with a complete list of stocks. The structure for the **Stocks** and **Surveys** databases are defined and described below in section 6.3 (*Databases supporting the Decision Support Tool*).

3.3 Task #3. Identify surveys used for advice and gaps in coverage.

The files of regional survey information compiled for EWG-18-04, which were organized on a survey-by-survey basis, provide basic information on the surveys and the information they collect. These files are not well suited to the task of identifying gaps in the information provided by the surveys. The EWG considers that the proposed **Stocks** database, which will include a complete list of relevant stocks (from Tables 1a and 1c of the EU MAP), will be a suitable information source for identifying stocks for which there are gaps in the information provided by the existing surveys.

3.4 Task #4. Identify surveys used for advice and gaps in coverage.

In considering how to construct the Decision Support Tool the EWG engaged in considerable discussion about the characteristics of “mandatory surveys” and whether there should be a set of eligibility requirements that surveys must satisfy to be considered for inclusion on the list of mandatory surveys (e.g., international coordination, data accessibility, no duplication with other surveys). The survey-scoring approach taken by previous surveys reviews (e.g., SGRN 10-03) did not have strict eligibility requirements. However, in that approach surveys that did not satisfy certain criteria were likely to have low overall scores and receive low ranking. The DST approach starts from the perspective of the stocks for which advice is provided and the DST does not explicitly rule out a survey from consideration based on the Y/N score for a single criterion because the same survey may qualify for inclusion based on its scores for other stocks for which the survey provides information.

The group did not develop an explicit definition for a mandatory survey other than the circular (and unhelpful) definition that a survey is mandatory if it is listed in Table 10 of the EU MAP.

3.5 Task #5. Rules and a procedure for evaluating and prioritizing surveys.

The decision support tool developed by the EWG encapsulates a set of rules into a procedure for evaluating the surveys and separating them into two lists, one set of surveys proposed for inclusion on the list of mandatory surveys and the other excluded from that list. Some of the excluded surveys will be sent to expert groups for further consideration and possible re-evaluation using the DST. If the Commission requires that the list of surveys be prioritized, one approach for doing so would be to develop a set of survey-specific scores based on the number of stocks for which each survey provides information used for stock assessment or advice. However, this approach for prioritization was not fully discussed or agreed by the EWG.

4 TASKS NOT ADDRESSED BY EWG-18-04.

Developing, refining, and testing of the Decision Support Tool consumed much of the meeting time for the EWG. Several tasks from the Terms of Reference were not addressed by the Group.

4.1 Task #6. Frequency of survey reviews.

The EWG did not discuss the frequency with which the list of surveys should be reviewed. That being said, the Decision Support Tool proposed by the EWG is not intended to be used only once to create a static list of mandatory surveys. Rather, the DST will identify surveys that are deficient in some respect and indicate further review by an expert group to develop revisions to the surveys and future re-evaluation with the DST. In addition to the re-evaluation with the DST,

cross checking of the **Stocks** database and the **Surveys** database will highlight needs for new surveys or for improving the time and spatial coverage of the current ones, especially in the Mediterranean and Black Sea where the number of mandatory survey is very limited.

Also, the EWG considers that gauging the importance of each survey is an aspect of survey evaluation that will require considerable work that cannot be accomplished in the short term. The Group discussed the idea of asking for a series of sensitivity analyses at future benchmark stock assessments that would leave each survey out of the assessment one-by-one to provide a standardized metric of the importance of each survey to the stock assessment. This form of analysis would require considerable additional work and the information on the importance of the set of surveys would accumulate very slowly. Another possibility for evaluating survey importance that was mentioned during the meeting was circulating a questionnaire to stock assessment experts to ask for their subjective judgment on the importance of each survey to the stock assessments in their area of responsibility. In either case, it might be sensible to consider the surveys review process to be an ongoing process that uses the DST to evaluate the surveys as additional information becomes available.

4.2 Task #7. Propose a format for describing and categorizing the mandatory surveys.

The EWG did not discuss a format for describing and categorizing the mandatory research surveys in the future DCF legal framework.

4.3 Task #8. Discuss methodologies for evaluating the cost of surveys.

The EWG did not discuss methods for evaluating the cost of surveys. This is a complex issue that goes well beyond the funding required to conduct a survey at sea. The evaluation should also consider the value of the stocks for which the surveys provide information and the extent to which the survey provides information that influences the accuracy of the stock assessment results and uncertainty surrounding the advice. Not conducting a survey may save money in the short term, but lead to costly miss-management of the stocks in the long term.

5 PROPOSED TERMS OF REFERENCE (TOR) FOR THE SURVEYS REVIEW.

EWG-18-04 proposes the following three Terms of Reference for the surveys review EWG.

5.1 TOR 1. Evaluate the list of surveys.

The surveys review EWG is requested ...

- a) to evaluate a list of candidate surveys at sea to be supported by the DCF based on the **Stocks** database, **Surveys** database, and Decision Support Tool (DST) described in the section immediately below;
- b) to provide quality assurance of the information contained in the **Stocks** database and **Surveys** database;
- c) to produce a set of tables that summarize the DST results;
- d) to produce a list of surveys proposed for inclusion on the list of mandatory surveys (a revision to Table 10 of the EU MAP) based on the application of the DST; and
- e) to identify potential duplicate surveys that need evaluation.

5.2 TOR 2. Identify fishery management needs.

The surveys review EWG is requested to provide analyses of the **Stocks** database ...

- a) that identify stocks not covered by surveys and
- b) that identifies duplicate surveys and compares this list of duplicates with the list of duplicates identified under TOR 1e.

The analyses for this TOR should be conducted after completing TOR 1b (provide quality assurance of the two databases).

5.3 TOR 3. Identify survey information relating to an ecosystem-based approach to fishery management.

The surveys review EWG is requested to provide an analysis of the **Surveys** database that identifies contributions by the surveys of ecosystem data supporting Marine Strategy Framework Directive (MSFD) descriptors 1, 3, 4, 6, and 10.

The analyses for this TOR should be conducted after completing TOR 1b (provide quality assurance of the two databases).

6 PROPOSED DECISION SUPPORT TOOL FOR THE SURVEYS REVIEW AND ASSOCIATED DATABASES.

6.1 Background to surveys under the DCF.

Based on the current EU Regulation (2017/1004 DCF recast, article 5.1.b), the multiannual Union programme shall establish a list of mandatory research surveys at sea¹². This list is provided in Implementing Decision 2016/1251 (EU-MAP Table 10). When the current DCF was set, the list of mandatory surveys was a direct extraction of a similar list under the previous regulation. Despite various efforts (e.g., through Regional Coordination Meetings) no updates were made to the current list of mandatory research surveys.

Compared to the previous DCF, three major changes are considered relevant in the context of preparing for the next review of surveys.

- End-user driven data collection: While the previous DCF was highly prescriptive in terms of deliverables, both in quantitative terms as well as in qualitative terms, the current DCF revolves around end-user needs. As such, end-user needs have to be taken into account when designing regional and/or national multi-annual work plans. The DCF ensures data collection is carried out while providing a minimum set of specifications. The prescriptive list of mandatory surveys is the most stringent element of the DCF in that it provides direct reference to the surveys that have to be carried out by the MS (Chapter IV.1 of Impl. Dec. 2016/1251).
- Eligibility: Under the previous DCF, the list of surveys served both the data collection itself as well as the financial aspects of the DCF as this list provided the list of surveys eligible for co-funding by the Commission under the direct funding regime in existence at the time. The latter is no longer the case as the funding mechanism has shifted towards indirect funds through the European Maritime Fisheries Fund (EMFF), the inclusion of surveys under national programmes has mainly become a national decision, while ensuring the end-user needs are matched. As a result, the list of surveys is to be seen mainly as an obligation rather than the foundation for funding the surveys. The applicability of a survey for a certain MS and the MS's contribution to a survey is the subject of a review procedure aimed at the evaluation of the MS's Work Plans.
- Cost-sharing of surveys: The current DCF has a new provision in place ensuring the participation of MS in surveys when the respective MS has a certain share in the TAC or total EU landings of a survey's target species (Chapter V.7 of Impl. Dec. 2016/1251). The list of mandatory surveys serves as the basis for the cost sharing, despite not specifying target species in its current form.

The variety of tasks handed to EWG-18-04 (see section 1.1, *Terms of Reference for EWG-18-04*) culminated in preparing for the revision of the list of mandatory surveys, based on the criteria as spelled out in the current DCF, while taking into account the above mentioned changes as these changes have an effect on the methodology chosen to populate this list. The chosen method for the revision should build upon the review procedures already developed and applied previously (e.g., SGRN 10-03) as well as on the criteria as defined in the current DCF. In addition, the accumulated knowledge and experience in the implementation of surveys and concomitant use of data by end users should provide further insights into the evaluation process.

¹² "Research survey at sea" is defined under EU-MAP as: trips carried out on a research vessel, or a vessel dedicated to scientific research for stock and ecosystem monitoring, and designated for this task by the body in charge of the implementation of the national work plan established in accordance with Article 21 of Regulation (EU) No 508/2014. (Impl. Decision 2016/1251 chapter I.10).

6.2 The Decision Support Tool (DST).

Given the above mentioned fundamental changes to the DCF, and given that the ultimate goal is to populate the renewed list of mandatory surveys, rather than conduct a scientific and technical evaluation of the surveys as foreseen in 2010, STECF EWG 18-04 developed a Decision Support Tool (DST) to evaluate surveys for inclusion in the revised list of mandatory surveys, based on the current DCF criteria.

6.2.1 Aim of the Decision Support Tool.

The Decision Support Tool developed by EWG 18-04 aims to revise the current list of mandatory surveys and any other surveys proposed by Member States and RCGs while addressing the relevant criteria spelled out in the DCF (Article 5.5 of EU Reg. 2017/1004) and taking end-user needs into consideration. The outcome of the exercise shall provide an unambiguous proposal for a new list of mandatory surveys while the tool itself shall be flexible enough to cater for future evaluations of other end-user needs.

6.2.2 Method used in the Decision Support Tool.

Starting from end-user needs stemming from requests for advice on fisheries management on a stock-by-stock basis, the EWG developed a DST based on a binary decision tree to arrive at a decision whether a specific survey for a given stock shall be proposed for inclusion in the list of mandatory surveys. As the exercise starts with end-user needs in support of the CFP, all stocks currently subject to an analysis that provides advice for CFP needs (e.g., a stock assessment or the direct calculation of a TAC from a survey index or an approach based on trends in population indicators) are evaluated in terms of the use of the survey data in the analysis, the relevance of the survey to the analysis, and how the DCF criteria are met by this survey for the given stock.

By design, the binary decisions made within the framework of the DST do not result in “scores” for the particular elements of that survey for the given stock. This approach bypasses issues associated with scoring and assigning weights to the relative importance of the various criteria. Although scoring leads naturally to a ranking of the surveys, the EWG takes the view that surveys should be judged for their performance for specific stocks rather than overall performance on a survey-by-survey basis. That said, collapsing the information gathered for a specific survey across the set of stocks provides a view of the overall performance of the survey. Furthermore, results from the DST highlight areas for future improvement of a survey as well as potential opportunities to better tailor each survey to satisfy the end-user needs.

A flowchart depicting the design of the DST is given in Figure 1 and an example of the overview table produced by the tool (which takes the form of an Excel worksheet) is included as Annex 2 to this report and as an electronic annex. In short, the DST starts with a specific stock for which advice is needed and couples that stock with each relevant survey and follows a sequence of questions leading either to (a) a proposal to include the survey in the list of mandatory surveys or (b) a proposal to terminate data collection for that specific stock by the particular survey. Prior to ending up at either of these extremes, questions must be answered to address the criteria as listed in the Implementing Decision. Embedded in the DST are various loops allowing for end-user input (through associated expert groups) and the possibility of improving and adjusting a survey before taking a “drastic” decision to terminate the data collection. Detailed instructions on the use of the tool, as well as guidance how to approach the questions that must be answered when applying the tool, are to be provided in a yet-to-be-written guidance document. An overview of the information required by the DST is provided in Table 1.

It is crucial to realize the DST revolves around the contribution of a survey to the analysis leading to the provision of advice for a specific stock. Note that for a multi-species survey, this tool focuses on the applicability of that survey to a single stock and this focus might result in the termination of data collection for a particular stock if the data are not used or needed (but only for stocks for which an assessment of any type has been carried out). Specific to surveys that are multi-species, application of the DST to one stock might imply that the survey should stop collecting data for that stock, but the survey as a whole would not be terminated if it provided data that are used or are needed for a different stock. (Stopping data collection for one stock opens up the possibility of allocating time and budget to other data collection activities that might be more useful.) In situations where a stock is provided with information from multiple surveys, the DST exercise is applied separately for each respective survey for that stock.

6.2.3 Criteria addressed by the Decision Support Tool.

Article 5.5 (EU Reg. 2017/1004) stipulates the requirements to be taken into account when drawing up the list of mandatory surveys. Amongst other requirements, information needs shall be taken into account for the management of the CFP, adequate coverage of stock areas, as well as the avoidance of duplication. These criteria form the basis for the decisive elements of the Decision Support Tool (DST). Adequate coverage and avoidance of duplication are equally important criteria in the DST. Given the linear structure of the decisions embedded in the Tool, both requirements have to be fulfilled before a survey can be suggested for inclusion in the list of mandatory surveys. However, the EWG envisions that should a survey fail one of these criteria, there would be discussion at a relevant Expert Group that could lead to alignment of the survey to satisfy the criterion that it failed. Then the survey could again be considered for inclusion in the list of mandatory surveys.

On top of the criteria mentioned above, EWG-18-04 also considered criteria set out in previous dedicated survey review groups (e.g., SGRN 10-03). EWG-18-04 was presented with an overview of these criteria in a background discussion document from DG MARE. Table 2 provides the full list of the criteria as well as how these criteria are covered through the DST, including recent considerations based on the views expressed in the discussion document prepared by DG MARE for EWG-18-04.

6.2.4 DST instructions and examples.

To reach the goal of proposing a new list of mandatory surveys, the EWG proposes a two-step process of (1) compiling supporting information followed by (2) an exercise that evaluates each stock - survey combination to determine answers to the set of binary questions built into the Decision Support Tool (DST). The resulting table of information provides a Y/N evaluation for each survey (with respect to all the stocks for which the survey provides information) regarding whether the survey will be proposed for inclusion in a new list of mandatory surveys. The resulting table also identifies surveys that require further discussion and evaluation in a relevant expert group for possible re-evaluation at a later time.

An example of results from a test application of the DST by EWG-18-04 is provided in Annex 2 and as an electronic annex.

6.2.5 Preliminary testing and results of the Decision Support Tool.

During the EWG meeting some members were able to do limited, preliminary testing of the DST and associated databases using information that had been prepared for the EWG. This testing helped with the refinement of the field structures for the database files and DST and for preparing guidance and instructions for filling in the database fields and the Y/N answers to criteria embedded in the DST.

6.3 Databases supporting the Decision Support Tool.

After much deliberation the EWG decided to begin developing a **Stocks** database and a **Surveys** database to provide the data needed for the review of surveys using the Decision Support Tool described above in section 6.2 (*The Decision Support Tool [DST]*). The two databases are set up to be very general in order to accommodate the breadth of the fishery resource surveys at sea that exist across the relevant EU areas. Although the information populated in the databases is simplistic relative to the complexity and detail that could be included, the databases are sufficient to enable application of the DST on any given survey with the objective of highlighting end-user needs as outlined in the **Stocks** database coupled the ability to link these needs with the actual survey features provided in the **Surveys** database. The **Stocks** and **Surveys** databases can be linked using the "Survey" field that is common to both databases.

A complete list of the fields associated with the two databases and how they relate to the DST is provided in Table 1. Also, there is an electronic annex to this report with Excel templates for the databases. Table 1 and the Excel templates together describe and illustrate the way each field should be populated and the repositories that should be used for the information.

6.3.1 The **Stocks** database.

The proposed **Stocks** database would provide general information about each fish stock and the surveys at sea that provide information to support the assessment or provision of management

advice for the stock. The proposed database, by design, would contain information for all fish stocks of interest to the Commission, as listed in Tables 1a and 1c of the EU MAP. Stocks for which there are no surveys at sea would be included in the database to assist the future review of surveys in identifying potential needs for additional surveys (e.g., stocks for which there are no or limited surveys). The proposed database would include an entry (a row of information) for each and every stock listed in Tables 1a and 1c of the EU MAP as well as additional entries to identify all surveys that provide information used in the provision of advice (one entry for each survey). To facilitate data entry and cross-referencing, the database would include information for each stock on its regional association and responsible advisory body and associated working group.

The proposed **Stocks** database would be the primary source of information to which the DST would be applied for evaluating whether surveys should be included in the future proposed list of mandatory surveys. The **Stocks** database would also be used to identify possible duplicate surveys and stocks that are not covered by surveys.

6.3.2 The **Surveys** database.

The proposed **Surveys** database would provide detailed information about the characteristics of EU surveys at sea used to collect data needed for stock assessment or the provision of management advice, either with respect to fisheries or to the ecosystem. The proposed database would contain information for all surveys at sea listed in Table 10 of the EU MAP and any additional surveys proposed by Member States and the RCGs. The proposed database would contain one entry (row of information) for each survey and associated information such as the type of gear/methodology used in the survey, the areas covered, the time period covered by the existing data series, coordination and standardization of survey, and some of the types of data collected.

The proposed **Surveys** database would provide information to the DST on whether a survey is internationally coordinated and harmonized and whether its data are accessible. Also, this database would be the primary source of information for identifying surveys that provide ecosystem information to support the Marine Strategy Framework Directive as well as to identify needs for expanding the area and time coverage of existing or new proposed surveys.

7 ROADMAP FOR THE SURVEYS REVIEW.

Having prepared the Decision Support Tool (DST) as well as having designed the databases to support the use of the DST (see section 6 above, *Proposed decision support tool for the surveys review and associated databases*), EWG-18-04 proposes the following roadmap towards the revision of the list of mandatory surveys.

This roadmap is drawn up on the basis of having the DG MARE steer the process as an independent institution (through STECF), rather than being driven by the Member States, as the latter might have an interest in the actual inclusion or non-inclusion of a specific survey.

The EWG considers the first two actions in the Roadmap to be particularly important because they are needed to ensure the successful application of the DST. During the EWG meeting there was limited time to test the DST and no time to develop comprehensive instructions for populating the databases and applying the DST.

Roadmap for the surveys review				
Action	Purpose	Responsible	Timing	Comments
Review outcome from EWG-18-04.	1. Test the DST based on existing partial databases developed by EWG-18-04 and augmented by the RCGs. 2. To make certain the database and DST guidelines are clear and complete. 3. To advise on improvements for the databases and guidelines for the DST.	STECF PLEN 18-02	Mid-July 2018	
Develop guidance document with details on how to populate the databases and apply the DST	To provide clarity to users regarding how to input the data into the databases and how to use the data within the DST.	RCGs or ad hoc contracts	Aug to Sep 2018	
Present outcome from EWG-2018-04 at RCGs.		DG MARE	Sep 2018	
RCG to populate the two databases.	To make sure that the necessary data on stocks and surveys are included in the <i>Stocks</i> and <i>Surveys</i> databases	RCG	Sep 2018	Build upon existing Excel files as a starting point, add needed information in new columns and rows. If needed, sub-groups to be established to complete the work.
Status of populating the databases to be reported through Liaison Meeting.		Liaison Meeting	Oct 2018	
Analysis to be done applying the DST, resulting in a suggested list of surveys to be included in the new Table 10.		ad hoc contracts	Nov 2018-Jan 2019	

Roadmap for the surveys review				
Action	Purpose	Responsible	Timing	Comments
Review of the outcome of the analysis.	See proposed ToRs for the surveys review EWG-19-XX	Review group meeting (EWG-19-XX)	Mar 2019	End-users to be included in the group.
Report survey review to STECF Plenary.		EWG-19-XX chair	Apr 2019	

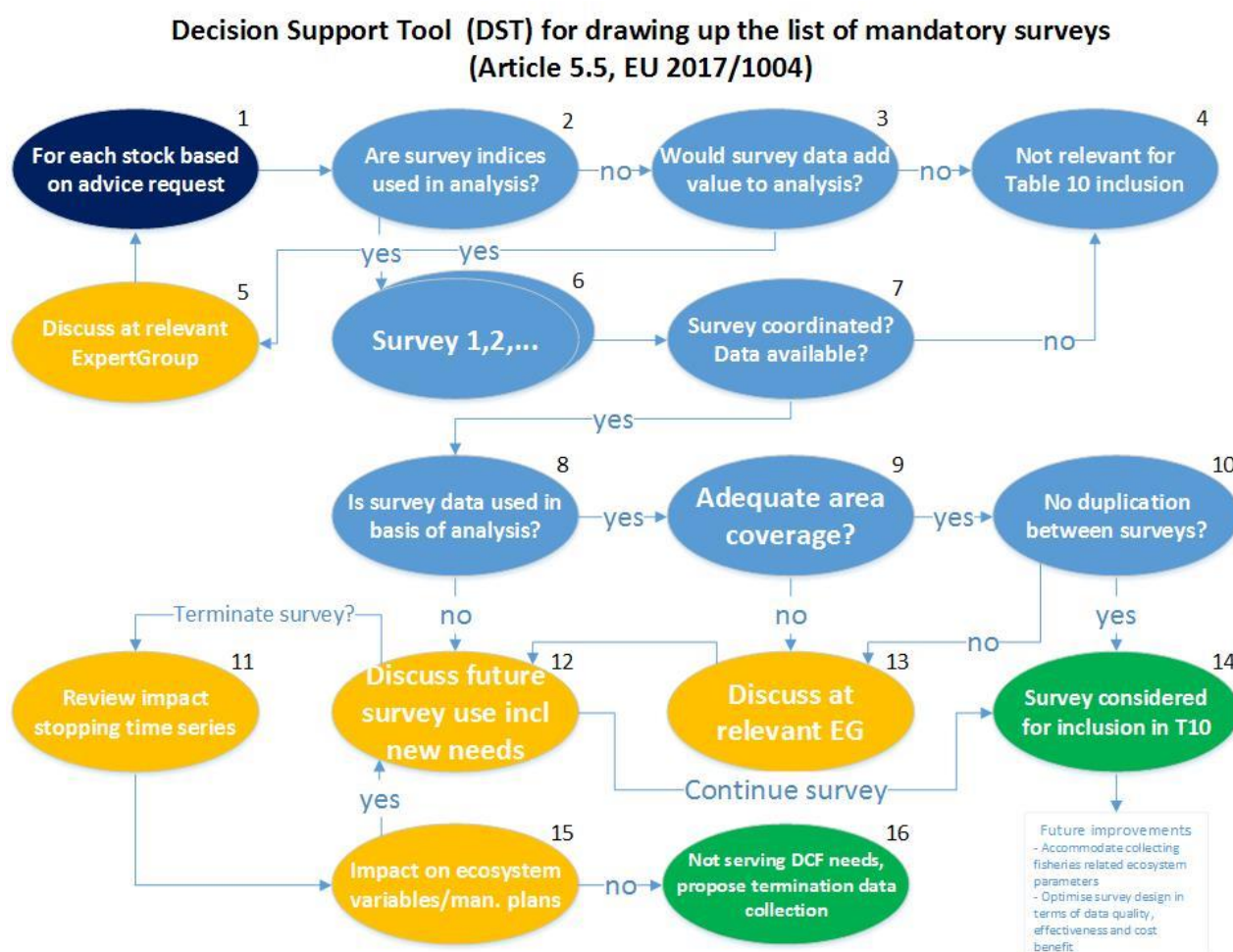
8 LIST OF ACRONYMS AND THEIR DEFINITIONS.

Acronym	Definition
CFP	Common Fisheries Policy
DCF	Data Collection Framework
DG MARE	Directorate General for Maritime Affairs and Fisheries
DST	Decision Support Tool
EMFF	European Maritime Fisheries Fund
EU MAP	European Union Multiannual Programme
EWG	Expert Working Group
GES	Good Environmental Status
GFCM	General Fisheries Commission for the Mediterranean
ICES	International Council for the Exploration of the Seas
JRC	Joint Research Center
MS	Member State
MSFD	Marine Strategy Framework Directive
NAFO	North Atlantic Fisheries Organization
RCG	Regional Coordination Group
SGRN	Study Group on Research Needs
STECF	Scientific, Technical and Economic Committee for Fisheries
TAC	Total Allowable Catch
TOR	Term of Reference
US NOAA	United States National Oceanic and Atmospheric Administration

9 FIGURES.

9.1 Figure 1. Schematic diagram of the Decision Support Tool (DST).

The propose Decision Support Tool uses a sequence of Yes/No questions to evaluate whether or not a survey for a given stock is proposed for inclusion in the list of mandatory surveys. The ovals in the diagram represent either actions or questions. If there are several surveys associated with the given stock, each such survey is evaluated. Oval 1, which is the normal entry point, is for a stock for which there is a request for management advice. For this stock the tool asks a series of questions (ovals 2-10, with light blue fill) that evaluate the information the survey provides for the given stock. The series of questions is repeated for each associated survey (represented in oval 6). Ovals 5, 11-13, and 15 (with yellow fill) represent actions involving discussions and decisions by relevant experts.



10 TABLES.

10.1 Table 1. Overview of the data fields in the **Stocks** and **Surveys** databases and the decision support tool (DST).

Field Name	Short Description	Detailed Description or Example or Notes or Instructions	Stocks Database	Surveys Database	DST	Notes
Region	Region name	Region name from EU MAP - Tables 1A and 1C.	XXXX	XXXX	Input (<i>Stocks</i>)	
Sub-region	Sub-region name	E.g., Eastern, Western, as applicable, following the nomenclature of the GFCM.	XXXX	XXXX		
GSA	GFCM geographic sub-area	For Mediterranean and Black Sea only. When a joint assessment has been carried out, refer to the adopted combination of GSAs.	XXXX			
Adv_body	Advisory body	Advisory body acronym (e.g., ICES, GFCM, STECF) for stocks that have been assessed. If no assessment, leave blank.	XXXX		Input (<i>Stocks</i>)	
Assess_EG	Assessment expert group	Assessment expert group acronym (e.g., hawg, wgbfas, EWG MedAssess, WGSAD) for stocks that have been assessed. If no assessment, leave blank.	XXXX		Input (<i>Stocks</i>)	
Stock	Stock ID	Stock name from EU MAP - Tables 1A and 1C.	XXXX		Input (<i>Stocks</i>)	
Adv_given	Advice given	Y / N. Y if the advisory body (in Adv_body) normally provides advice; N otherwise.	XXXX		Input (<i>Stocks</i>)	
Survey	Survey ID	Acronym of the survey, according to EU MAP Table 10 or the standardised list from ICES / RCGs. To be completed as part of the guidance document.	XXXX	XXXX	Input (<i>Stocks</i>)	
Sub-survey	Sub-survey ID	Sub-survey name under the large coordinated survey, where applicable, following standard naming conventions. To be completed as part of the guidance document.	XXXX			

Field Name	Short Description	Detailed Description or Example or Notes or Instructions	Stocks Database	Surveys Database	DST	Notes
Survey_used	Survey indices used in assessment or for TAC calculation.	Y / N. Y if survey used in stock assessment; Y if survey used in setting TAC (e.g., based on survey trend) or providing spawning biomass indices and/or advising for specific measures for sensitive habitats (e.g., nursery, spawning areas), especially in the Mediterranean; N otherwise. Include brief text description of the information type(s) used (e.g., abundance index, weight-at-age, maturity). Examples: "Y Age 1-4 index, weight-at-age", "Y maturity".	XXXX		Input (Stocks)	
Assess_cat	Assessment category	ICES categories (1 to 6) or similar classification, if any. Not available for the Mediterranean or Black Sea; leave blank.	XXXX		Input (Stocks)	
Advice_input	Input data from advisory sheet	Input data identified on ICES advisory sheet, STECF-EWG MedAssess reports, STECF-EWG BSAAssess reports, GFCM Assessment Form of the WGSAD and WGSASP, or similar source, to aid in Y/N choice for Survey_as_basis in DST.	XXXX			
Int_coordination	International coordination & harmonized	Y / N. Y if survey is coordinated by specific expert group, bilaterally coordinated or in direct cooperation with relevant RFMO and the survey uses a harmonized protocol. N otherwise. Include the name of the international coordination group. Note partial harmonisation in the Comments column. Examples: "Y wgbifs", "Y wgneps", "Y MEDITS".		XXXX	Input (Surveys)	
Data_access	Data accessible and available for scientific use	Y / N. Info to be found in Table 1G in MS workplan. Y if survey database is mentioned or alternative information is given ensuring that the data are available; N otherwise.		XXXX	Input (Surveys)	

Field Name	Short Description	Detailed Description or Example or Notes or Instructions	Stocks Database	Surveys Database	DST	Notes
Survey_as_basis	Survey provides the basis for the assessment or management advice	Y / N. Y if ICES assessment category is 1-4 or if TAC is based on the survey. Corroborate with information in Advice_input. For Mediterranean or Black Sea stocks; the default is Y.			Output	<1>
Stock_coverage	Stock area covered fully	Y / N / P(artly) / U(nknown). Is the stock distribution area fully covered by the survey? In the Mediterranean and Black Sea stock boundaries (unit stocks) have not yet been fully defined and agreed for many species. In addition, in some areas the stock distribution is only partially covered, because the stock is shared with non-EU countries. Thus the components in the European waters are fully covered, but the entire distribution is only partially covered. In such cases mark as Y.	XXXX			
Coverage_OK	Adequate coverage	Y / N. Y If this survey is sufficiently covering one or more management areas for the stock; Y if this survey is part of an overall coordinated survey that provides adequate coverage; Y for highly migratory species and stocks shared with third countries and full coverage cannot be anticipated; Y if this survey provides adequate coverage of part of a management area or the areas where a certain life stage is concentrated. N if coverage is not sufficient.			Output	<2>

Field Name	Short Description	Detailed Description or Example or Notes or Instructions	Stocks Database	Surveys Database	DST	Notes
No_survey_dupl	No duplication between surveys	Y / N based on analysis of information found in the <i>Stocks</i> database, complemented by expert knowledge. Y if survey does not overlap with any other survey with the same target stocks in space, season (month) or survey gear; Y if survey has partial overlap with any other survey in space, season or survey type; N otherwise. Include details in the Comments column as needed.			Output	
Propose_Survey	Survey proposed for inclusion	Y / N. Y if all columns = Y; Y if Coverage_OK = N while all other columns = Y and information is provided on actions to be taken (e.g., to be discussed by a relevant expert group).			Output	<3>
Comments	Comments	Notes to flag and describe special conditions. Indicate the Field Name that each comment applies to. Write each item as a separate sentence. Examples: "Stock_coverage only for Area XXX", "Adaptation_plan will be evaluated by group HAWG."	XXXX	XXXX	Output	
Beneficial_survey	Would assessment benefit	Y / N / U(nknown), based on analysis of Stocks and Surveys . Y if the assessment would benefit from the survey data; N if the assessment would not benefit; U if unknown.			Output	<4>
Adaptation_plan	Survey adaption is planned	Y / N. Y if adaption of relevant survey for assessment needs is already planned; include a description in the Comments column and indicate the party responsible for follow-up action. N if no adaptation has been concluded.			Output	

Field Name	Short Description	Detailed Description or Example or Notes or Instructions	Stocks Database	Surveys Database	DST	Notes
Actions_by_whom	Actions to be taken / responsible for action	Describe here what actions are to be taken and by whom (e.g., name the responsible group) for all issues identified and described in the Comments column. If a survey is a clear Yes or a clear No, then no further action needs to be described here.			Output	<5>
Country	Country ID	Standard three-character abbreviation.		XXXX		
EU_member	EU Member State	Y / N. This information may be important for highly migratory species that are jointly managed by EU and non-EU countries.		XXXX		
Survey_area	Area covered by the survey	ICES area, GSAs, NAFO divisions etc.		XXXX		
Survey_target	Stock targeted by survey	Stock ID if single target. "Multispecies" if not single target. Check manual.		XXXX		
Target_stages	Life stages of target	Eggs, larvae, juveniles, adults		XXXX		
Starting_year	Starting year of the survey	Starting year of the survey (YYYY)		XXXX		
Ending_year	Ending year of the survey	Ending year of the survey (YYYY) or "ongoing" if the survey continues		XXXX		
Qtr	Quarter	Quarter of the year the survey begins in.		XXXX		
Month	Month	Month of the survey (1,2, ..., 12) or the sequence of month numbers (e.g., 3,4,5). Check the survey manuals.		XXXX		
Survey_type	Survey type	Name of the gear/methodology used during the survey (e.g., acoustic, demersal trawl).		XXXX		
MSFD_desc_D1	Data could contribute to MSFD desc. D1	Y / N.		XXXX		
MSFD_desc_D3	Data could contribute to MSFD desc. D3	Y / N.		XXXX		
MSFD_desc_D4	Data could contribute to MSFD desc. D4	Y / N.		XXXX		
MSFD_desc_D6	Data could contribute to MSFD desc. D6	Y / N.		XXXX		

Field Name	Short Description	Detailed Description or Example or Notes or Instructions	Stocks Database	Surveys Database	DST	Notes
MSFD_desc_D10	Data could contribute to MSFD desc. D10	Y / N.		XXXX		
Time_series_gap	Time series interruption/gap	Y / N. Place explanation of the interruption/gap in the Comments column.		XXXX		

Notes:

- <1> The Detailed Description for Survey_as_basis is an interim measure that will allow the surveys review to proceed in a timely manner. Evaluating the degree to which a survey provides data that are essential will require collecting information from stock assessment experts or requesting sensitivity analyses during future benchmark assessments. Survey_as_basis is not a direct input from the **Stocks** database. Its Y/N value is determined by the person applying the DST.
- <2> Future use of the survey for the stock should be discussed by the relevant expert group leading to a decision whether or not to continue collecting information for the stock with this survey.
- <3> If a survey is proposed for inclusion in the list of mandatory surveys, the survey should be seen as a possible platform for collecting fisheries related ecosystem parameters in line with the CFP.
- <4> The future potential for a stock to benefit from a survey should be discussed by the relevant expert group and lead to a decision whether or not to consider using this survey's information for the stock.
- <5> Within the review process the experts should consider the criterion "avoid disruption of the survey time series".

10.2 Table 2. Relationship between the Decision Support Tool and criteria used and proposed for the future from previous SGRNs (07-01, 10-03) and criteria presented by DG MARE in a background discussion document.

Criterion	Relation to EWG 18-04 Decision Support Tool (DST)
SGRN 10-04 proposal	
1a. Internationally coordinated	1a and 1b are bundled as no clear cut separation can be made. International coordination is a condition under the current DCF (EU Reg. 2017/1004 Art. 5.5b). Judging fulfilment of this condition is addressed through one of the primary questions in the DST.
1b. Harmonised	See 1a
2a. Fisheries management	The DST is built around the use of survey data to address end-user needs in their advisory role in support of the CFP. Information needs for the management of the CFP is a condition under the current DCF (EU Reg. 2017/1004 Art. 5.5a)
2b. Ecosystem management needs	DCF Ecosystem indicators do no longer apply directly under the current DCF, other than addressing fisheries related data needs under the Marine Strategy Framework Directive (MSFD; Directive 2008/56/EC, COM Decision 2017/848). However, EU Reg. 2017/1004 Art. 5.5d stipulates the information needs for the monitoring of ecosystem variables. While designed around data needs for fisheries advice, the DST incorporated steps to avoid losing options for collecting ecosystem variables when there is a proposal to terminate data collection.
3. Data access	As 1a, data access is a condition under the current DCF (EU Reg. 2017/1004 Art. 15.4). Judging fulfilment of this condition is addressed through one of the primary questions in the DST.
4. Survey coverage	This criterion is now addressed through adequate coverage of stock areas as defined in EU Reg. 2017/1004 Art. 5.5e. Adequate area coverage is a pivotal criterion in the DST. SGRN 10-03 down-weighted the score for this criterion because of difficulty making the evaluation from the available information.
5. No duplication	This criterion is now addressed through EU Reg. 2017/1004 Art. 5.5f specifically addressed at the avoidance of duplication between research surveys. Testing for duplication is included in the DST (see detailed instruction on the definition of ‘duplication’ in this context). SGRN 10-03 down-weighted the score for this criterion because of difficulty making the evaluation from the available information.
6. History of use	For fisheries advice, time-series are of utmost importance. Thus, the preferred continuation is taken as a given in the basics of the DST. However, the continuation of time-series might be jeopardised over a survey potentially not qualifying for inclusion in the list of mandatory surveys. The DST then foresees addressing the criterion as laid down by the Regulation to avoid disruption of a time-series (EU Reg. 2017/1004 Art. 5.5g).

Criterion	Relation to EWG 18-04 Decision Support Tool (DST)
Additional criteria presented by DG MARE	
7. Data needs, important for advice and/or management, which are not yet met by surveys	This criterion is not directly in line with DCF requirements, moreover this criterion relates to the identification of potential gaps in the data collection through surveys when stock-based analysis might improve through the inclusion of survey data. Within the DST, a loop is foreseen to collect information on potential improvement of the respective analysis when survey data is added. This information ultimately provides insight where surveys can improve (e.g. area expansion), thus better addressing end-user needs.
8. Data quality	This criterion is not a direct criterion for this exercise, nor specifically addressed in the Regulation in relation to surveys. In general, judgement of data quality through end-users is enshrined in the current DCF. When a survey is considered as useful for a stock based analysis, end-users are expected to reflect on the data quality and to report issues.
9. Survey potential to produce ecosystem data	See 2b
10. 'Importance' of target stock(s)	The importance of target stocks is not considered of direct relevance for this exercise as this is mainly linked to cost-sharing of surveys though target species (Impl. Dec. 2016/1251 Chapter V.7). Whether a survey is proposed for the inclusion in the list of mandatory surveys has to be based on CFP needs rather than the arguable importance of a stock.
11. For new surveys: what is the added contribution	New surveys (new compared to the current list of mandatory surveys) can be tested through the DST. When in use for analysis, these surveys are treated as any other survey. New surveys not yet in use for analysis are included when listed as potentially relevant for an analysis. If not, these surveys are not considered mature enough to be listed in the list of mandatory surveys.

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12 CONTACT DETAILS OF EWG-18-04 PARTICIPANTS

¹ - Information on EWG participant's affiliations is displayed for information only. In any case, Members of the STECF, invited experts, and JRC experts shall act independently. In the context of the STECF work, the committee members and other experts do not represent the institutions/bodies they are affiliated to in their daily jobs. STECF members and experts also declare at each meeting of the STECF and of its Expert Working Groups any specific interest which might be considered prejudicial to their independence in relation to specific items on the agenda. These declarations are displayed on the public meeting's website if experts explicitly authorized the JRC to do so in accordance with EU legislation on the protection of personnel data. For more information: <http://stecf.jrc.ec.europa.eu/adm-declarations>

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13 LIST OF BACKGROUND DOCUMENTS

Background documents are published on the meeting's web site on:

<https://stecf.jrc.ec.europa.eu/ewg1804>

List of background documents:

EWG-18-04 – Doc 1 - Declarations of invited and JRC experts (see also section 12 of this report – List of participants)

14 LIST OF ANNEXES

1. Table 10 of EU Multiannual Programme.
2. Example of the overview table produced by the Decision Support Tool (DST).

14.1 Electronic annexes.

Electronic annexes are published on the meeting's web site on:

<https://stecf.jrc.ec.europa.eu/ewg1804>

List of electronic annexes documents:

File name	Description
DST_Results_and_Supporting_Data-14June2018.xlsx	Example of the results table produced by the DST as well as the supporting data in the <i>Stocks</i> and <i>Surveys</i> databases.
Database_and_DST_Variables-14June2018.xlsx	An electronic version of Table 1.

15 ANNEXES

15.1 Annex 1. Table 10 of EU Multiannual Programme (*Research surveys at sea*).

Name of the survey	Acronym	Area	Period	Main targeted species
Baltic Sea				
Baltic International Trawl Survey	BITS Q1 BITS Q4	IIIaS, IIIb-d	1 st and 4th Quarter	Cod and other demersal species
Baltic International Acoustic Survey (Autumn)	BIAS	IIIa, IIIb-d	Sep-Oct	Herring and sprat
Gulf of Riga Acoustic Herring Survey	GRAHS	IIIId	3 rd Quarter	Herring
Sprat Acoustic Survey	SPRAS	IIIId	May	Sprat and herring
Rügen Herring Larvae Survey	RHLS	IIIId	March-June	Herring
North Sea and Eastern Arctic (ICES areas I and II)				
International Bottom Trawl Survey	IBTS Q1 IBTS Q3	IIIa, IV	1st and 3 rd Quarter	Haddock, Cod, Saithe, Herring, Sprat, Whiting, Mackerel, Norway pout.
North Sea Beam Trawl Survey	BTS	IVb, IVc, VIIId	3rd Quarter	Plaice, Sole
Demersal Young Fish Survey	DYFS	Coasts of NS	3 rd and 4th Quarter	Plaice, sole, brown shrimp
Sole Net Survey	SNS	IVb, IVc	3rd Quarter	Sole, Plaice
North Sea Sandeels Survey	NSSS	IVa, IVb	4 th Quarter	Sandeels
International Ecosystem Survey in the Nordic Seas	ASH	IIa	May	Herring, Blue whiting
Redfish Survey in the Norwegian Sea and adjacent waters	REDNOR	II	August- September	Redfish
Mackerel egg Survey (Triennial)	NSMEGS	IV	May-July	Mackerel egg production
Herring Larvae survey	IHLS	IV, VIIId	1 st and 3 rd Quarter	Herring, Sprat Larvae
NS Herring Acoustic Survey	NHAS	IIIa, IV, VIa	June, July	Herring, Sprat
Nephrops TVsurvey (FU 3&4)	NTV3&4	IIIA	2 nd or 3 rd Quarter	Nephrops
Nephrops TVsurvey (FU 6)	NTV6	IVb	September	Nephrops
Nephrops TVsurvey (FU 7)	NTV7	IVa	2 nd or 3 rd Quarter	Nephrops
Nephrops TVsurvey (FU 8)	NTV8	IVb	2 nd or 3 rd Quarter	Nephrops
Nephrops TVsurvey (FU 9)	NTV9	IVa	2 nd or 3 rd Quarter	Nephrops
North Atlantic (ICES Areas V-XIV and NAFO areas)				
International Redfish Trawl and Acoustic Survey (Biennial)	REDTAS	Va, XII, XIV; NAFO SA 1-3	June/July	Redfish
Flemish Cap Groundfish survey	FCGS	3M	July	Demersal species
Greenland Groundfish survey	GGs	XIV, NAFO SA1	October/November	Cod, redfish and other demersal species
3LNO Groundfish survey	PLATUXA	NAFO 3LNO	2 nd and 3 rd Quarter	Demersal species

Name of the survey	Acronym	Area	Period	Main targeted species
estern IBTS 4th quarter (including Porcupine survey)	IBTS Q4	Vla, VII, VIII, IXa	4 th Quarter	Demersal species
Scottish Western IBTS	IBTS Q1	Vla,VIIa	March	Gadoids, herring, mackerel
ISBCBTS September	ISBCBTS	VIIa f g	September	Sole, Plaice
WCBTS	VIIe BTS	VIIe	October	Sole, Plaice, Anglerfish, Lemon sole
Blue whiting survey		VI, VII	1 st and 2 nd Quarter	Blue whiting
International Mackerel and Horse Mackerel Egg Survey (Triennial)	MEGS	Vla, VII,VIII, IXa	January-July	Mackerel, Horse Mackerel egg production
Sardine, Anchovy Horse Mackerel Acoustic Survey		VIII, IX	March-April-May	Sardine, Anchovy, Mackerel, Horse Mackerel abundance indices
Sardine DEPM (Triennial)		VIIIc, IXa	2 nd and 4 th Quarter	Sardine SSB and use of CUFES
Spawning/Pre spawning Herring/Boarfish acoustic survey		Vla, VIIa-g	July, Sept, Nov, March, Jan	Herring, Sprat
Biomass of Anchovy	BIOMAN	VIII	May	Anchovy SSB (DEP)
Nephrops UWTv survey (offshore)	UWTv (FU 11-13)	Vla	2 nd or 3 rd Quarter	Nephrops
Nephrops UWTv Irish Sea	UWTv (FU 15)	VIIa	August	Nephrops
Nephrops UWTv survey Aran Grounds	UWTv (FU 17)	VIIb	June	Nephrops
Nephrops UWTv survey Celtic Sea	UWTv (FU 20-22)	VIIg,h,j	July	Nephrops
Nephrops Survey Offshore Portugal NepS	UWTv (FU 28-29)	IXa	June	Nephrops
Mediterranean waters and Black sea				
Pan-Mediterranean Acoustic Survey ()	MEDIAS	GSA 1, 6, 7, 9, 10, 15, 16, 17, 18, 20, 22	Spring-summer (qtrs 2- 3)	Small pelagic species
Bottom trawl survey in Black Sea,	BTSBS	GSA 29	Spring - autumn (qtrs 2,3,4)	Turbot
Pelagic trawl survey in Black Sea,	PTSBS	GSA 29	Spring-autumn (qtrs 2,3,4)	Sprat and Whiting
International bottom trawl survey in the Mediterranean (),	MEDITS	GSA 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 15, 16, 17, 18, 19, 20, 22, 23, 25	Spring-summer (qtrs 2- 3)	Demersal species

15.2 Annex 2. Example of the overview table produced by the Decision Support Tool (DST).

Decision Support Tool Inputs and Results							Survey is used for advice (Adv_given=Y)							Survey not used for advice (Adv_given=N)		Actions_by_Whom
Region	Adv_body	Assess_EG	Stock	Survey	Survey_used	Assess_Cat	Int_coordination (Y/N)	Data_access (Y/N)	Survey_as_basis (Y/N)	Coverage_OK (Y/N)	No_survey_dupl (Y/N)	Proposed_survey (Y/N)	Comments	Beneficial_survey	Adaptation_plan	
Baltic	ICES	WGBFAS	cod.27.22-24	BITSQ1	y	1	y	y	y	y	y	y	spatial overlap with BITSQ4, but different season			
Baltic	ICES	WGBFAS	cod.27.22-24	BITSQ4	y	1	y	y	y	y	y	y	spatial overlap with BITSQ1, but different season			
Baltic	ICES	WGBFAS	cod.27.24-32	BITSQ1	y	3	y	y	y	y	y	y	spatial overlap with BITSQ4, but different season			
Baltic	ICES	WGBFAS	cod.27.24-32	BITSQ4	y	3	y	y	y	y	y	y	spatial overlap with BITSQ1, but different season			
NS&EA	ICES	WGNSSK	cod.27.47d20	IBTSQ1	y	1	y	y	y	y	y	y	spatial overlap with IBTSQ3, but different season			
NS&EA	ICES	WGNSSK	cod.27.47d20	IBTSQ3	y	1	y	y	y	y	y	y	spatial overlap with IBTSQ1, but different season			
NS&EA	ICES	WGNSSK	had.27.46a20	IBTSQ1	y	1	y	y	y	y	y	y	spatial overlap with IBTSQ3, but different season			

Decision Support Tool Inputs and Results							Survey is used for advice (Adv_given=Y)							Survey not used for advice (Adv_given=N)		
Region	Adv_body	Assess_EG	Stock	Survey	Survey_used	Assess_Cat	Int_coordination (Y/N)	Data_access (Y/N)	Survey_as_basis (Y/N)	Coverage_OK (Y/N)	No_survey_dupl (Y/N)	Proposed_survey (Y/N)	Comments	Beneficial_survey	Adaptation_plan	Actions_by_Whom
NS&EA	ICES	WGNSSK	had.27.46a20	IBTSQ3	y	1	y	y	y	y	y	y	spatial overlap with IBTSQ1, but different season			
NA	ICES	WGWIDE	mac.27.nea	MEGS	y	1	y	y	y	y	y	y				
NA	ICES	WGWIDE	mac.27.nea	IESSNS	y	1	y	y	y	y	y	y	IESSNS currently not in EU-MAP Table 10			
NA	ICES	WGWIDE	mac.27.nea	IBTSQ1	y	1	y	y	y	y	y	y	Scottish Western IBTS			
NA	ICES	WGWIDE	whb.27.1- 91214	IBWSS	y	1	y	y	y	y	y	y				
MED	GFCM	WGSASP	ANE_GSA1	MEDIAS	y	N/A	y	y	y	n	y	y	no advice; assessment uncertain, the survey exists, but the area has been partially covered in some years, biomass indices used			

Decision Support Tool Inputs and Results							Survey is used for advice (Adv_given=Y)							Survey not used for advice (Adv_given=N)		Actions_by_Whom
Region	Adv_body	Assess_EG	Stock	Survey	Survey_used	Assess_Cat	Int_coordination (Y/N)	Data_access (Y/N)	Survey_as_basis (Y/N)	Coverage_OK (Y/N)	No_survey_dupl (Y/N)	Proposed_survey (Y/N)	Comments	Beneficial_survey	Adaptation_plan	
MED	STECF or GFCM	EWG_MedAssess or WGSASP	ANE_GSA5	MEDIAS	n	N/A								y	n	RCG/expert group (MEDIAS) at international level
MED	STECF	EWG_MedAssess	ANE_GSA6	MEDIAS	y	N/A	y	y	y	y	y	y	biomass tuning index from the ECOMED survey (2003 to 2008) and from the MEDIAS acoustic survey (2009 to 2016)			
MED	STECF	EWG_MedAssess	ANE_GSA11	MEDIAS	n	N/A							stock not yet assessed, area not yet covered by the already existing MEDIAS survey, in 2017 RCG requested the inclusion of the GSA in the MEDIAS plan	y	y	RCG/expert group (MEDIAS) at international level, action already taken, suggesting the inclusion of the GSA in the area covered by the already existing MEDIAS survey

Decision Support Tool Inputs and Results							Survey is used for advice (Adv_given=Y)							Survey not used for advice (Adv_given=N)		Actions_by_Whom
Region	Adv_body	Assess_EG	Stock	Survey	Survey_used	Assess_Cat	Int_coordination (Y/N)	Data_access (Y/N)	Survey_as_basis (Y/N)	Coverage_OK (Y/N)	No_survey_dupl (Y/N)	Proposed_survey (Y/N)	Comments	Beneficial_survey	Adaptation_plan	
NAFO	NAFO	NAFO SC	Cod (Gadus morhua) 3Ps	No EU survey in this NAFO Division 3P	N	N/A	-	-	-	-	-	-	No adaptation will be possible in EU surveys to cover such a distant areas.	?	No	-
NAFO	NAFO	NAFO SC	Redfish (Sebastes spp.) Subareas 2 and Div. 1F + 3K	No EU survey in this NAFO Subareas 2 nor NAFO Div. 1F + 3K	-	N/A	-	-	-	-	-	-	Stock assessed jointly with ICES subarea XIV. No adaptation will be possible in EU surveys to cover such a distant areas.	-	No	-
NAFO	NAFO	NAFO SC	Redfish (Sebastes spp.) SA1	No EU survey in this NAFO Subarea 1	-	N/A	-	-	-	-	-	-	Coastal stock. Adviced done by Greenland. No adaptation will be possible in EU surveys to cover such a distant areas.	?	No	-

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The Scientific, Technical and Economic Committee for Fisheries (STECF) has been established by the European Commission. The STECF is being consulted at regular intervals on matters pertaining to the conservation and management of living aquatic resources, including biological, economic, environmental, social and technical considerations.

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